



San Jose to Merced High-Speed Train Project EIR/EIS

Preliminary Alternatives Analysis

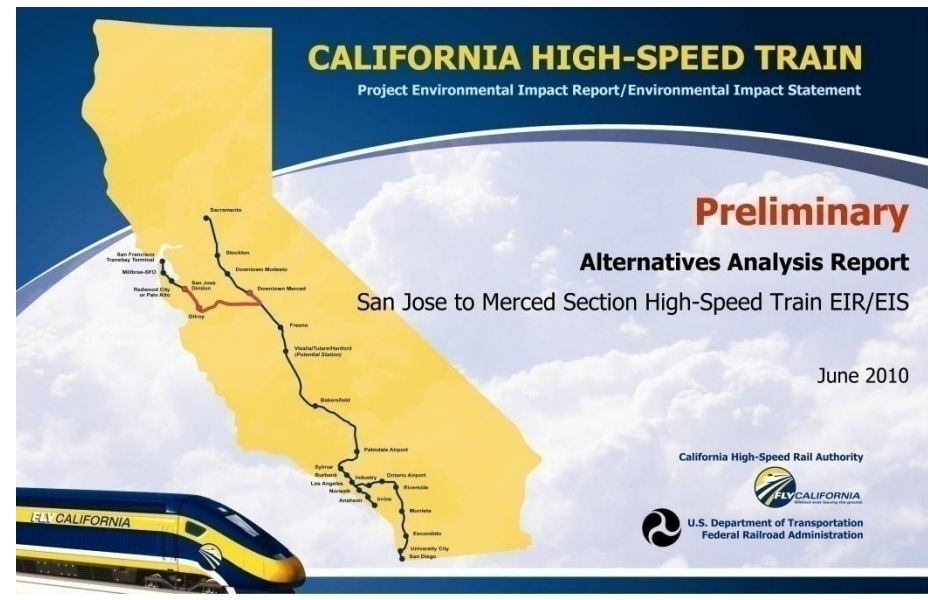
**Presentation to
California High Speed
Rail Authority Board**

June 3, 2010



Preliminary Alternatives Analysis

- Preliminary Alternatives Analysis posted at www.cahighspeedrail.ca.gov
- Evaluated alignment & stations from scoping (Spring 2009 – Fall 2009)
- Initial presentation to Board December 3, 2009
- Preliminary AA includes input since then
- Technical Studies – e.g., tunnel options in San Jose
- Extensive agency & public outreach





Public Outreach Activities

October 2009

- 4 Technical Working Group (TWG) meetings: 65 attendees
- 3 public meetings: 300 attendees

December 2009/January 2010

- 4 TWG meetings: 55 attendees
- 3 public meetings: 300 attendees

March 2010

- San Jose Tunnel community workshop: 150 attendees

May 2010

- 5/3 Gilroy City Council study session: 100 attendees
- 5/5-6 San Jose AA open houses: 130 attendees

Other agency and community interest group meetings:

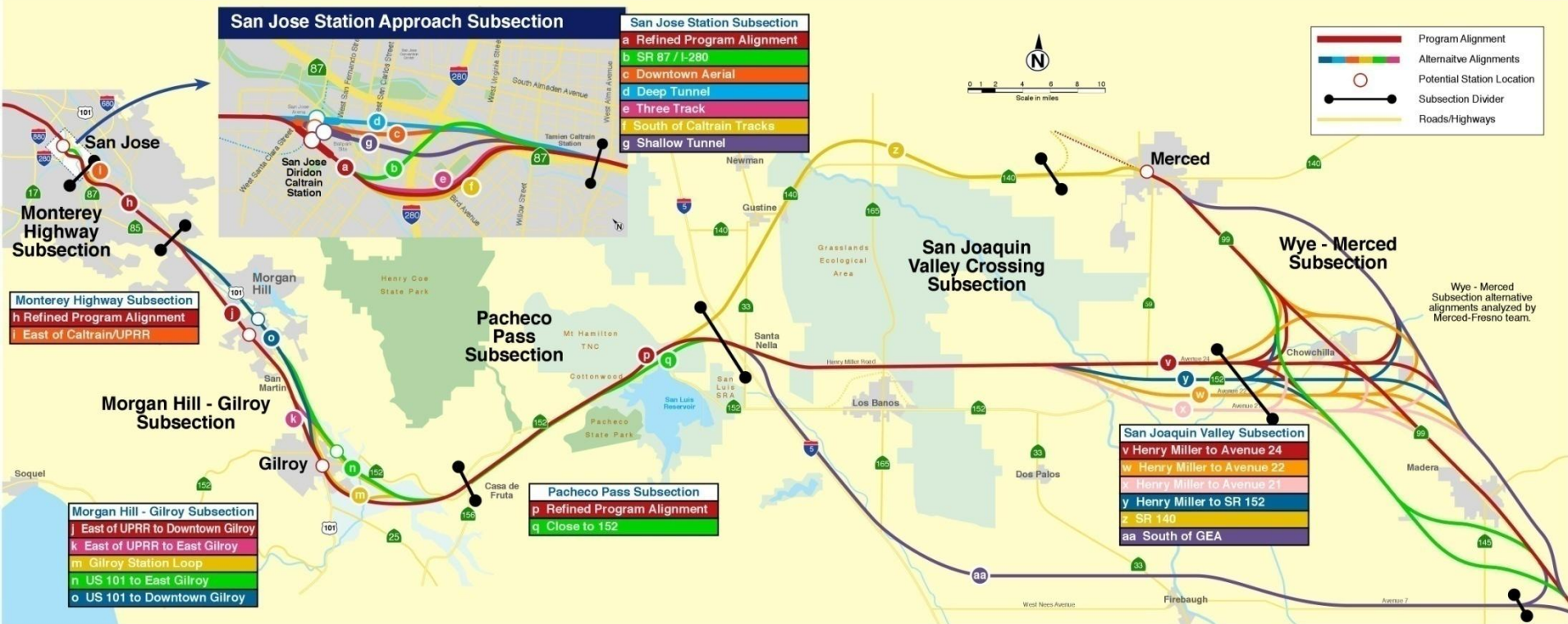
- 65 meetings conducted during the AA period with public agencies, cities, city councils, chambers of commerce, neighborhood representatives and more





Sub-Sections for Evaluation

San Jose to Merced Section - Alignment Alternatives





Downtown San Jose Sub-Section

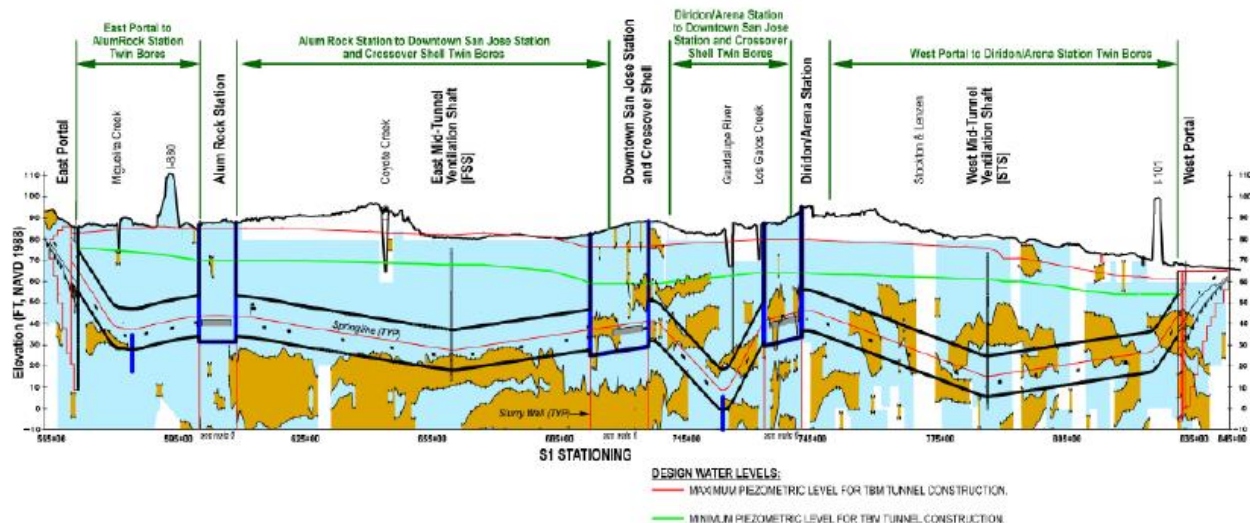




Deep Tunnel Issues

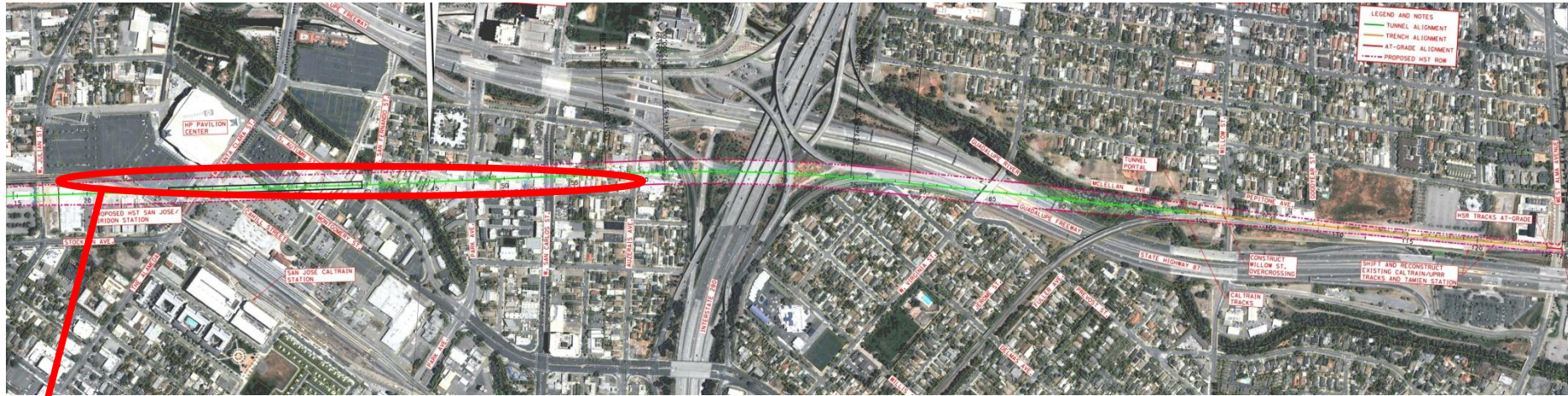


- Mined HST station in poor soils & high groundwater
1,380-ft long, 70-ft wide, 40-ft high, 140-ft deep





Deep Tunnel Issues (continued)



- **Mined HST station in poor soils & high groundwater**
 - **1,380-ft long, 70-ft wide, 40-ft high, 140-ft deep**
- **Inject stabilization chemicals from surface**



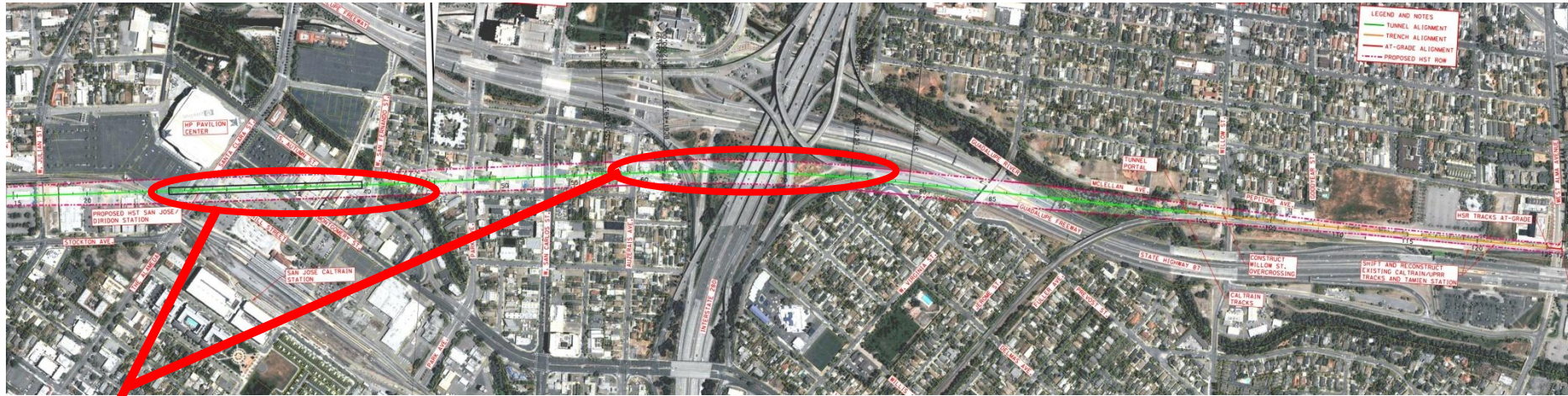
Figure 12. Hydromill used to Excavate Panels



Figure 13. Slurry Wall Reinforcement



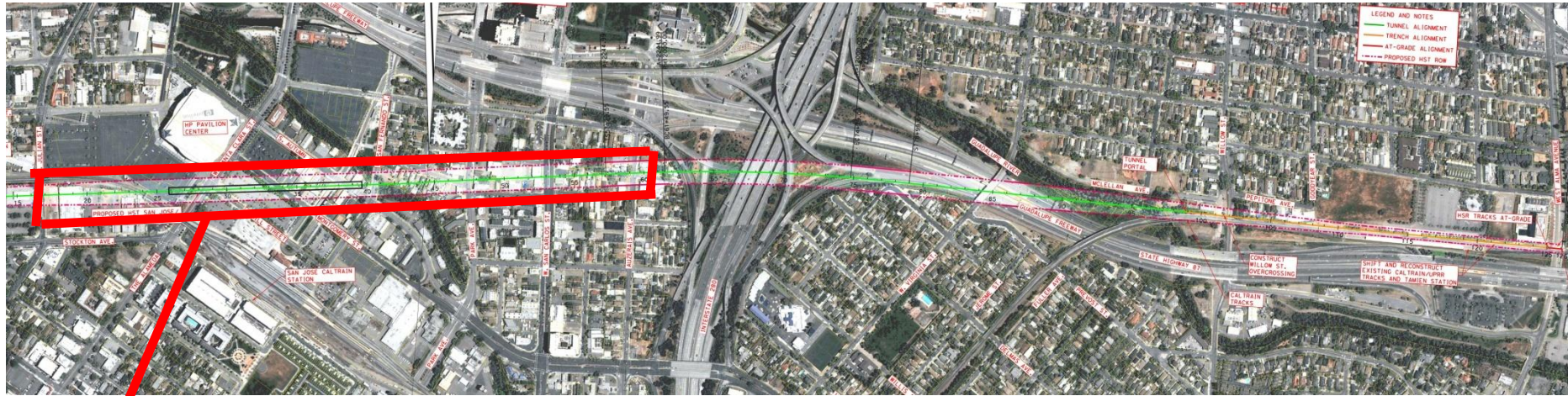
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 - Has not been used for any HST station in world



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- Construction duration - 7 to 16 years**



Deep Tunnel Issues (continued)



- **Settlement potential - SR87/I-280 interchange foundations**



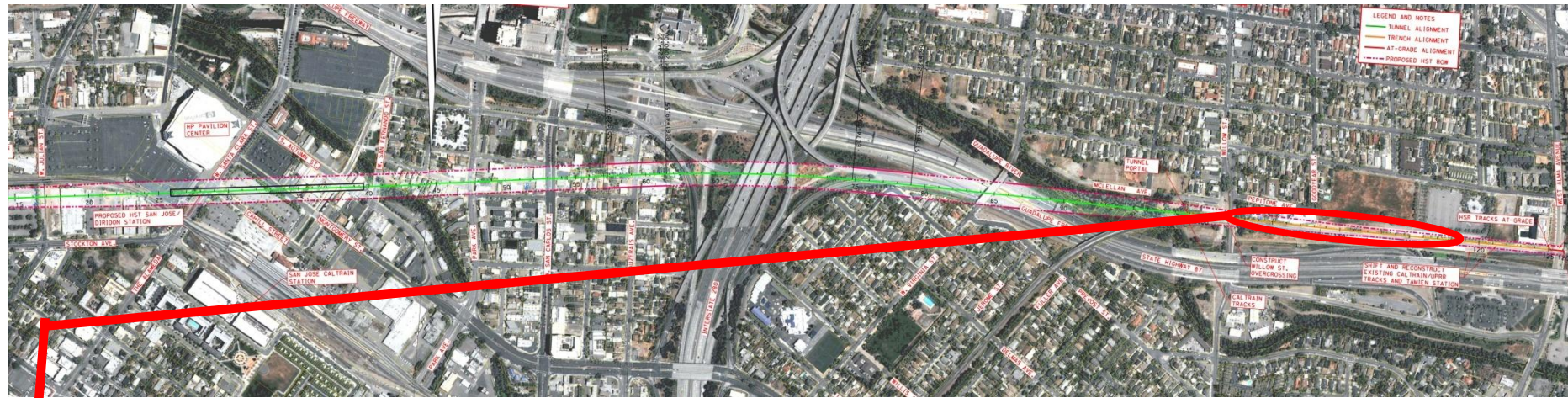
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- **Reconstruction of the Tamien Station**



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- **Relocation & reconstruction of northbound SR 87 on-ramp**



Deep Tunnel Issues (continued)



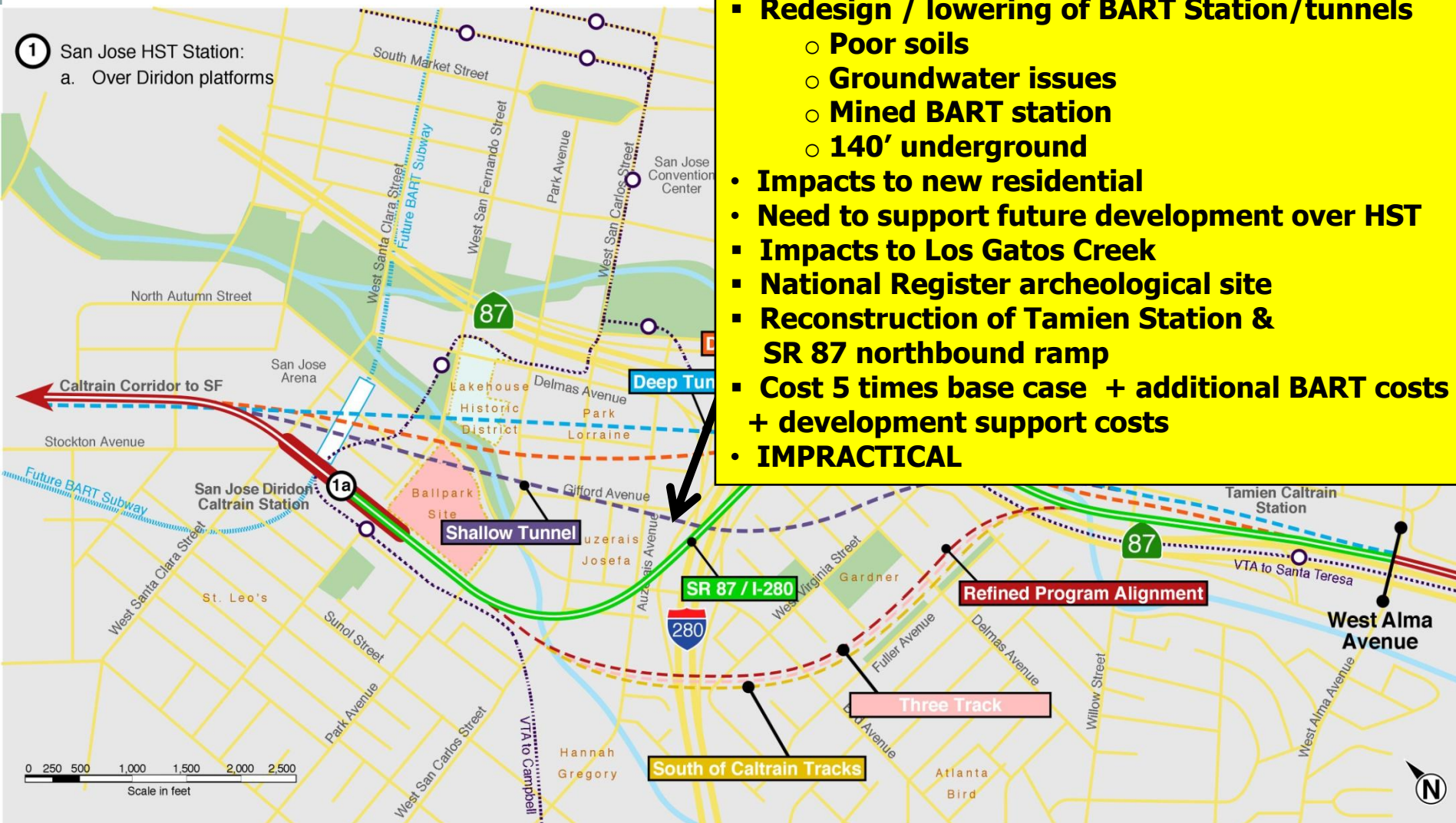
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- **Reconstruction of the Tamien Station**
- **Relocation & reconstruction of northbound SR 87 on-ramp**
- **Affect National Register archaeological site**
- **Higher operating costs**
- **Higher capital costs 7 times base case**
- **IMPRACTICAL**



Downtown San Jose Sub-Section

Shallow Tunnel (withdrawn)

- Redesign / lowering of BART Station/tunnels
 - Poor soils
 - Groundwater issues
 - Mined BART station
 - 140' underground
- Impacts to new residential
- Need to support future development over HST
- Impacts to Los Gatos Creek
- National Register archeological site
- Reconstruction of Tamien Station & SR 87 northbound ramp
- Cost 5 times base case + additional BART costs + development support costs
- IMPRACTICAL





Shallow Tunnel Issues

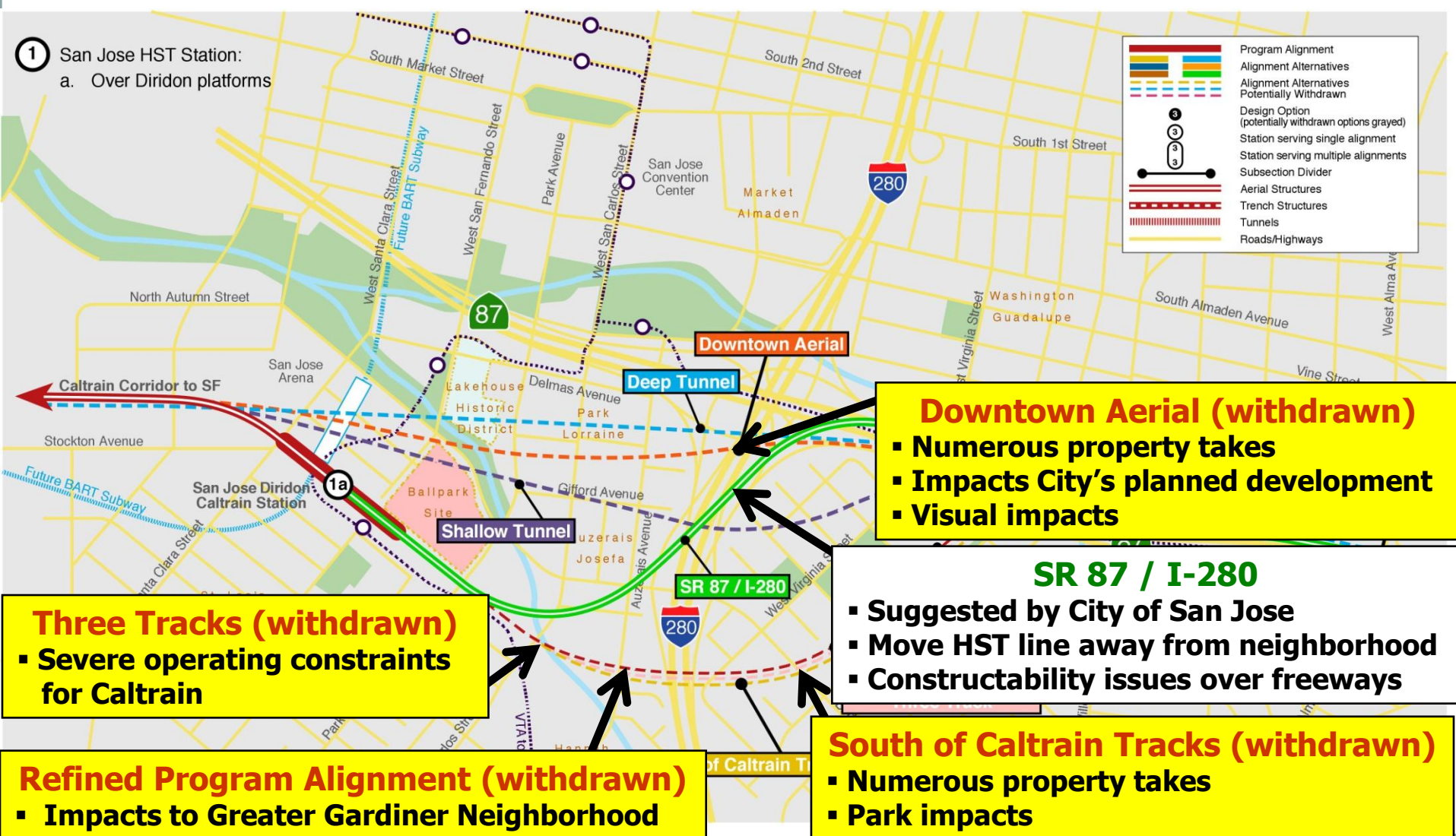


**Cut-and-cover Construction
Los Angeles**

- **BART Impacts:**
 - Proposed current cut & cover station 60' deep -
 - Would be lowered to 140' & mined in poor soils/groundwater
 - Tunnels to Santa Clara & Downtown San Jose stations would be lowered
 - Steeper tunnel grades
- **Impacts to:**
 - Utilities & streets
 - Los Gatos Creek
 - VTA – Vasona light rail line
 - Existing residential & commercial
 - National Register archeological site
 - Tamien Station reconstruction
 - SR 87 on-ramp reconstruction
- **7 years to construct**
- **Cost 5 Times Base Case + BART costs + concrete slab on top for development**
- **IMPRACTICAL**



Downtown San Jose Sub-Section





I-280/SR-87 Alignment Simulation





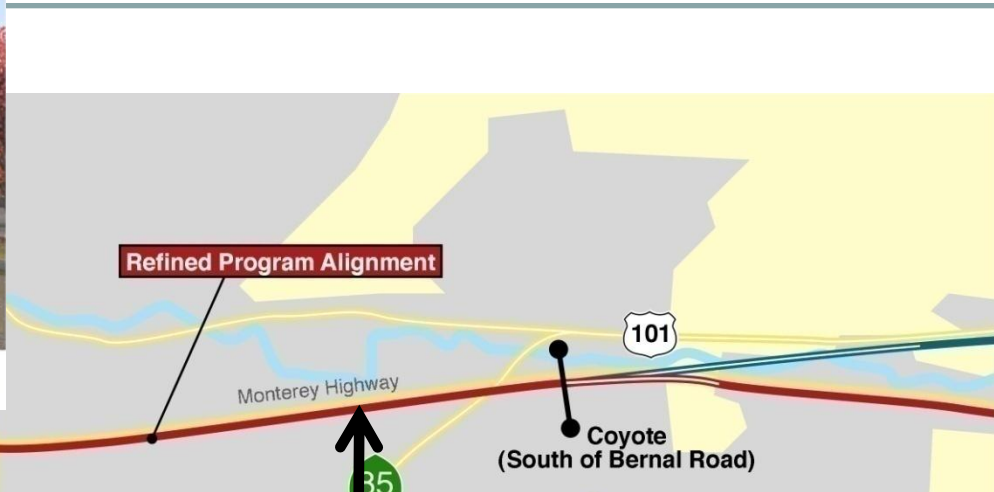
Monterey Highway Sub-Section



Monterey Highway – Existing



Monterey Highway – Proposed

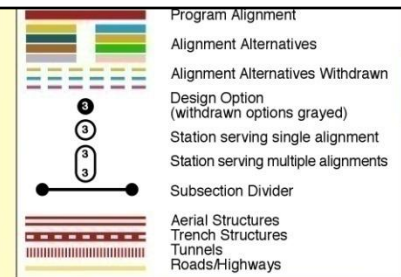


Refined Program Alignment

- Fewer constructability issues
- Faster speed HST curve – 125mph
- Monterey Highway from 6 to 4 lanes for 2.5 miles

East of Caltrain/UPRR (withdrawn)

- Continuation of withdrawn tunnel alternatives
- Reconstruction of Tamien Station & SR 87 northbound ramp
- Monterey Highway from 6 to 4 lanes for 2.5 miles
- Slower speed HST curve – 85 mph





Morgan Hill – Gilroy Sub-Section

COMBINATIONS OF TWO ALIGNMENTS AND TWO STATION LOCATIONS



US 101

- US 101 suggested by City of Morgan Hill
- Wildlife crossing benefits
- East of UPRR operating ROW

East Gilroy Station

US 101 to Downtown Gilroy

East of UPRR to East Gilroy

US 101 to East Gilroy

East of UPRR to Downtown Gilroy

East of UPRR

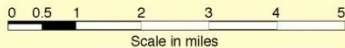
- Program Alignment
- East of UPRR operating ROW

Gilroy Station Loop (withdrawn)

- Express trains on US 101 Alignment
- 2 tracks to Downtown Gilroy Station
- Additional track miles, impacts & costs

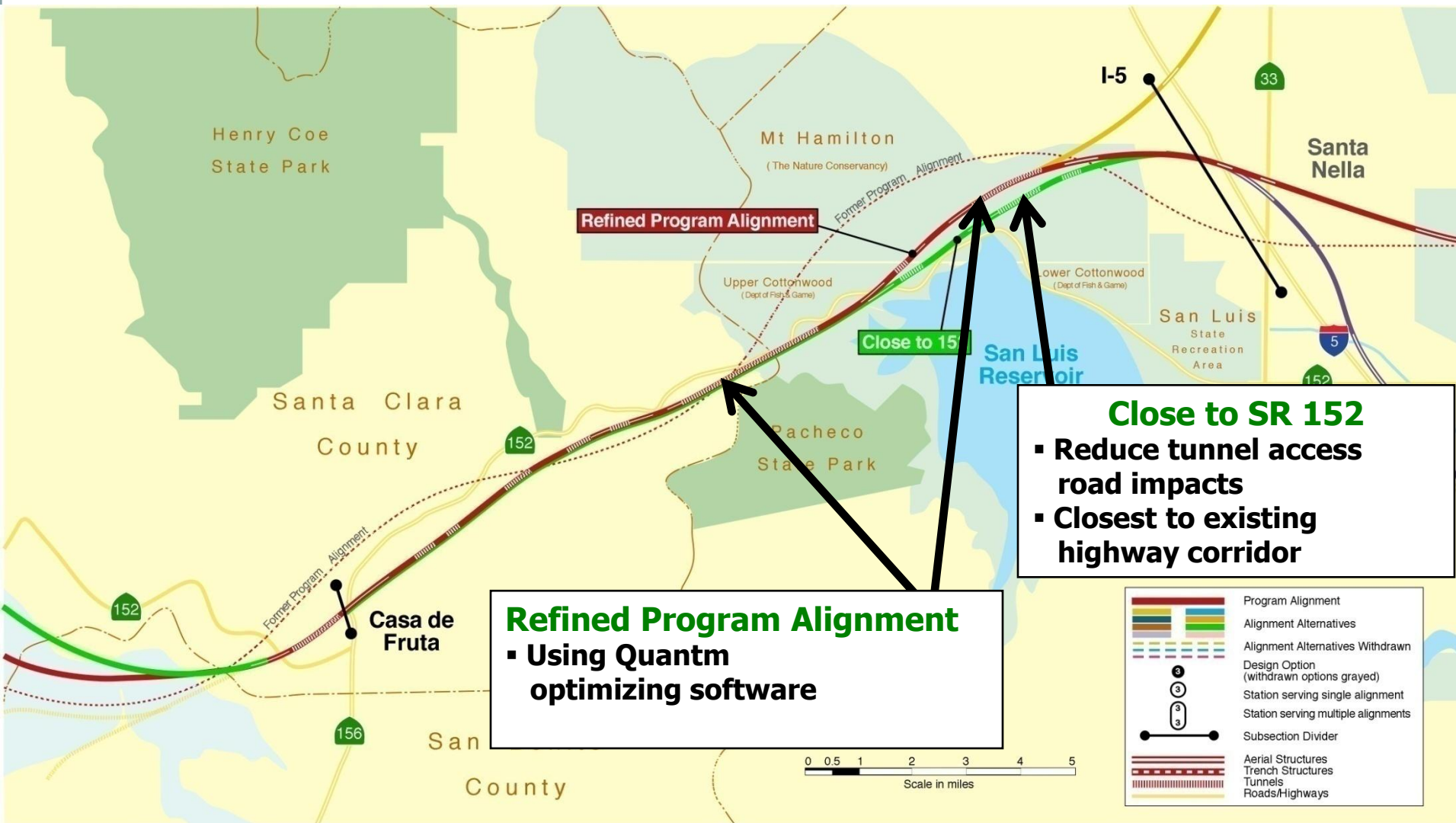
Downtown Gilroy Station

- Design options for Downtown Gilroy:
 - Aerial
 - Trench – Cost 1.3 times Base Case



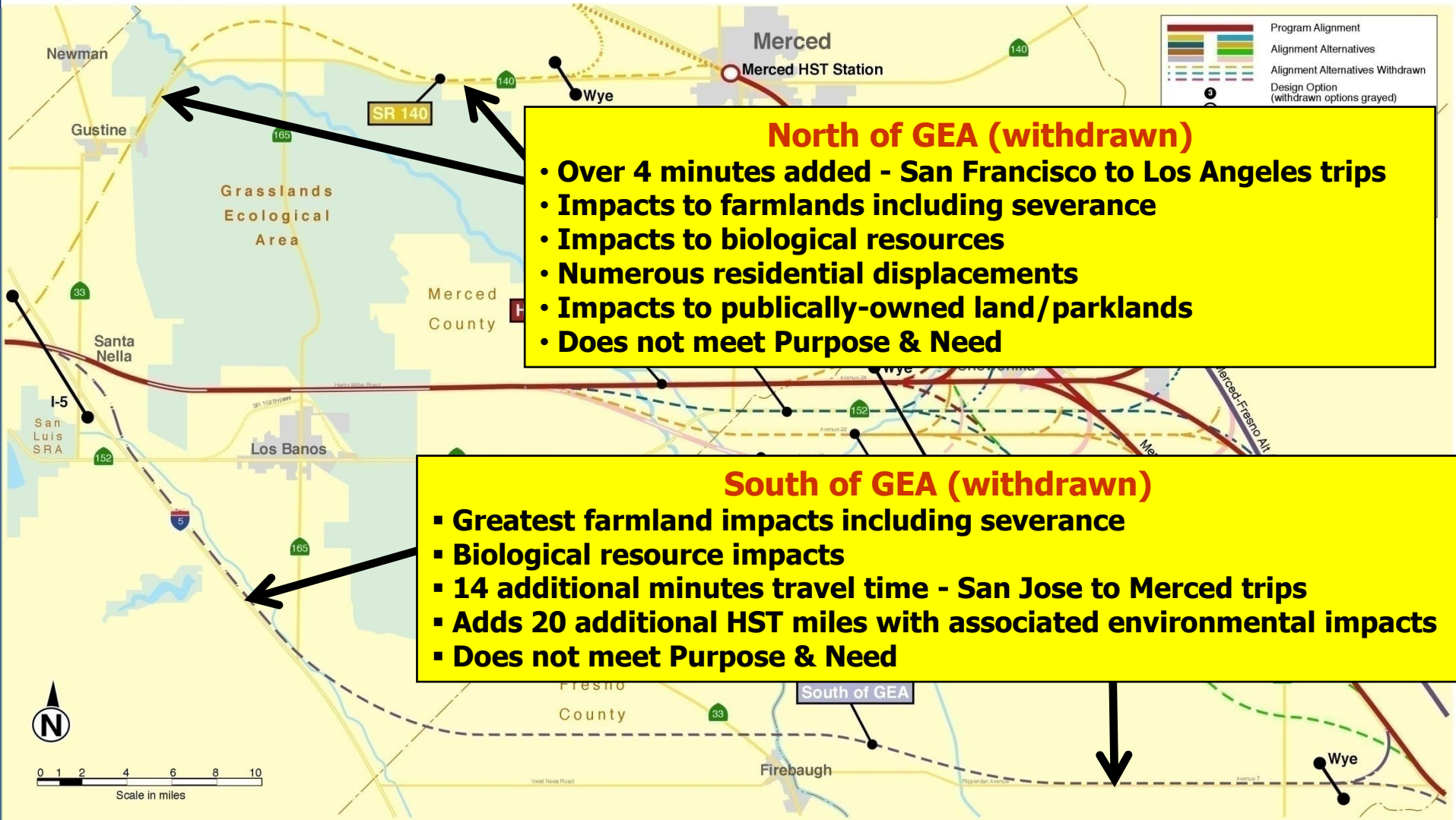


Pacheco Pass Sub-Section



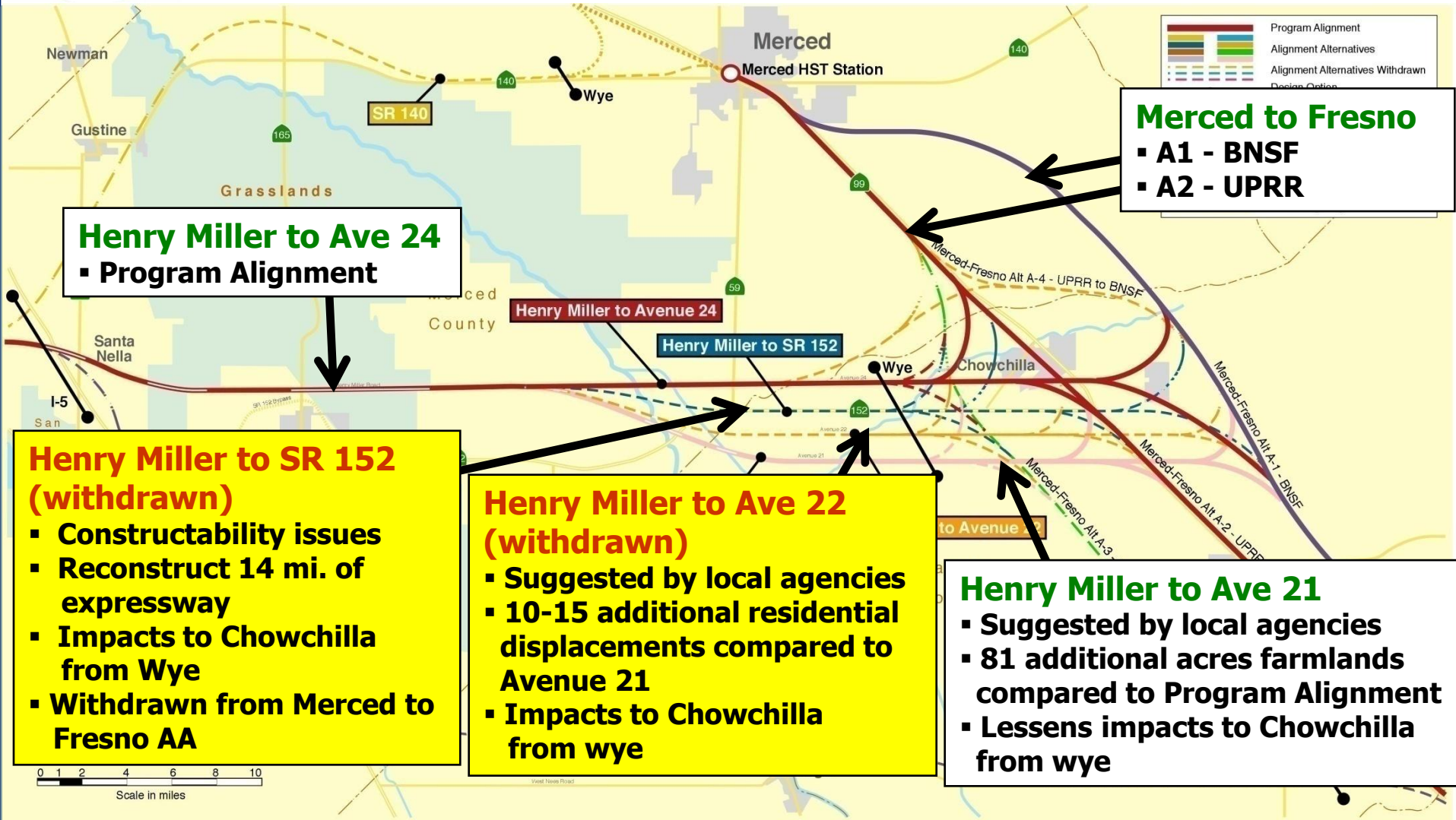


San Joaquin Valley Crossing Sub-Section





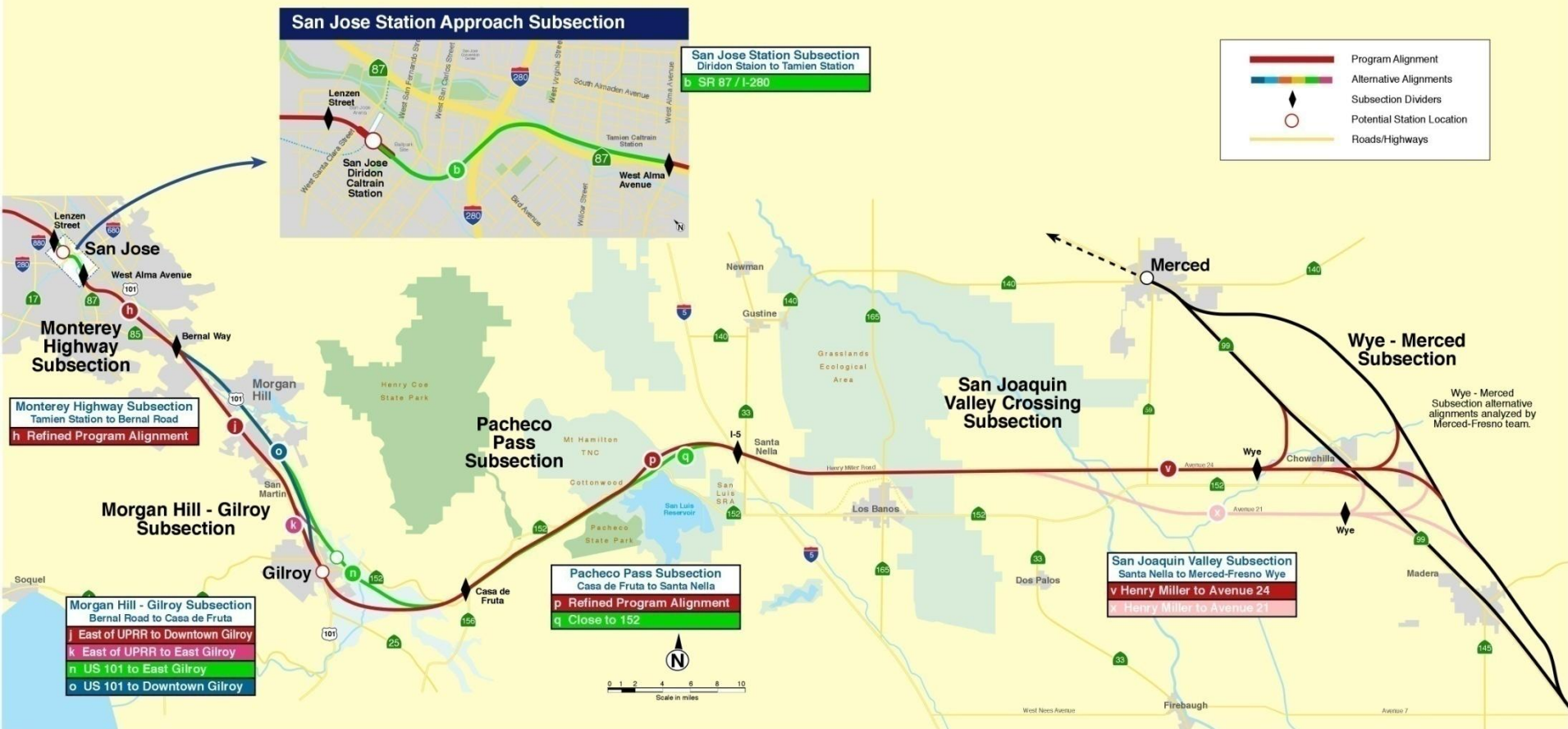
San Joaquin Valley Crossing Sub-Section





Alignments Carried Forward into EIR/EIS

San Jose to Merced Section - Alignment Alternatives





Next Steps

- **Public & Agency Meetings on Alternatives Analysis**
- **Supplemental AA (if needed) – September 2010**
- **15 % design – December 2010**
- **Draft EIR/EIS - July 2011**
- **Final EIR/EIS - February 2012**
- **Record of Decision – April 2012**